



Main lesson plan

Topic:	Rules and Laws
Year level:	4
Title:	Eggperiment Testing
Duration:	60 minutes



Western Australian Curriculum links

Health and Physical Education

Strand: Personal, Social and Community Health

Sub-strand: Being healthy, safe and active

Content:

Personal behaviours and strategies to remain safe in uncomfortable or unsafe situations, such as:

- Being alert and aware of unsafe situations
- Using assertive behaviour and language

Content:

Strategies to ensure safety and wellbeing at home and school

Science

Strand: Science Understanding

Sub-strand: Physical Sciences

Content:

Forces can be one object on another through direct contact or from a distance

Humanities and Social Sciences

Strand: Knowledge and Understanding

Sub-strand: Government and society

Content:

The importance and purpose of laws (e.g. to maintain social cohesion, to reflect society's values)



Lesson Objectives:

- Students compare and contrast laws and rules
- Students investigate the impact of a car crash with and without seatbelts
- Students recognise the difference between safe passenger behaviours and unsafe passenger behaviours
- Students highlight the dangerous impact passengers can have on their drivers

Materials/ Equipment:

- Egg crash cars (students should have made these in the previous lesson)
- Small zip lock bags (if you want to control the breaking eggs)
- Eggs or egg alternative e.g. hacky sack, small block or figurine
- Ramp or any surface that has a gradual slope
- Brick/box or wall (something that will stop the car at the bottom of the ramp)
- Whiteboard markers
- Butcher's paper/ A4 paper
- Computer/iPads/ Interactive Whiteboard (IWB)/Smart Board with access to the Internet
- Using Google chrome, access 'RAC Little Legends Club' road safety game at <http://littlelegends.rac.com.au/>



Time	Content
5mins	<p>Introduction: <i>In today's lesson we are going to test our egg car designs and discover how protected our eggs are (hopefully they are all wearing their seatbelts). Remember our aim for this experiment is to discover how car seatbelts keep passengers and drivers safe.</i></p> <ol style="list-style-type: none"> 1. <i>I would like everyone to take out your science workbooks (or a piece of paper to write down results), you are going to record your results e.g. did your egg scramble? Was there a car 'malfunction' such as wheels falling off?</i> 2. <i>You are also going to draw a picture of the egg outcome, how the car was positioned, where the egg ended up. Your writing has to be legible however these are just notes as we will be writing our main report in tomorrow's lesson.</i> 3. <i>If you could please get into your groups and one person from each of your groups collect your egg car.</i> 4. <i>One person from each group come out the front and collects a zip lock bag (if needed).</i>
30mins	<p>Activity 1: Egpperiment Testing</p> <ol style="list-style-type: none"> 1. Once the students have collected all their materials, go outside to where the testing ramp and box have been set up. 2. Have students sit around the ramp so they can see the testing occurring. 3. Ask each group to come up to the ramp, one at a time, to test their cars with the use of seatbelts. 4. Give each group their egg as they are about to test their cars, this will avoid breakages before the testing. 5. Students are to record what happened to their egg when it was tested. 6. The final test should be without the use of a seatbelt. 7. If time permits, repeat experiment twice for more accurate results.
15mins	<p>Activity 2: Distracted passengers</p> <ol style="list-style-type: none"> 1. <i>By completing our egg car experiment we discovered the importance of wearing a seatbelt as a passenger and a driver. What are some behaviours or things we could do in the car that might be dangerous?</i> 2. Teacher log onto 'RAC Little Legends Club' road safety game at http://littlelegends.rac.com.au/ and project this onto the classroom screen. 3. Ask for two volunteers to come to the front of the class and sit on two chairs, pretending that they are in a car. 4. The first student is going to be the driver and the second is going to be a passenger. The aim of this activity is to demonstrate that passengers can be very distracting to drivers. 5. Allow students to select a character of their choice from the online game. Get them to then select the bike as their 'ride'. Next, students are to select a route of their choice. 6. The driver is to start the game. Once the driver has started the game; the passenger can start the list of questions. 7. Give a list of questions for the passenger to ask the driver (the passenger and driver should be using their imagination to pretend that they are really driving in a car) e.g. <ul style="list-style-type: none"> - What is your favourite song at the moment? - Can you please turn the music up? - Do you think that it is going to rain today? - What did you have for breakfast this morning? - It's hot in here; can you turn on the air conditioning please? - What was the last movie you watched? - Who was your favourite character?



2mins	<ul style="list-style-type: none"> - Do you like my new t-shirt? - You didn't look, check out my new t-shirt? - What is your favourite food? - When is your birthday? - Check out my awesome dance moves (passenger dances in the car) - Show me your favourite dance move <p>Activity 3: Why laws are important?</p> <p><i>Why did some eggs break in our experiment and some eggs didn't break?</i></p> <ol style="list-style-type: none"> 1. Discuss safety features such as air bags and seatbelts. <ul style="list-style-type: none"> - <i>Let's imagine rather than eggs as our passengers we have humans as our passengers.</i> - <i>What would happen to our human passengers if we put them through the same test? What would be some of the injuries to humans if they were in the cars where the eggs broke?</i> - <i>What are some of the laws police enforce to keep passengers safe in a car?</i> - <i>What could happen if someone doesn't follow this law (think about the broken eggs)?</i> If student's respond with road rules e.g. before crossing the road you should stop, look, listen and think rather than laws such as always wear a bicycle helmet, be sure to distinguish the difference for students. Rules are developed to keeps us safe however they are not enforced by the police. Laws are a set of rules enforced by police. <p>If time permits replay the game from activity 2, this time with no passenger distracting the driver and have the rest of the class thinking about any rules or laws that would be helpful for bicycle riders.</p>								
5mins	<p>Activity 4: Laws vs Rules</p> <ol style="list-style-type: none"> 1. Organise students into groups of 4 2. Hand out the table below on butcher's paper or on an A4 sheet of paper. <table border="1"> <thead> <tr> <th colspan="2" style="text-align: center;">Road Safety Rules and Laws</th> </tr> <tr> <th style="text-align: center;">Rules</th> <th style="text-align: center;">Laws</th> </tr> </thead> <tbody> <tr> <td>1. Look out for cars in the driveway</td> <td>1. Always wear a helmet</td> </tr> <tr> <td>2.</td> <td>2.</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Allow students 2 minutes to come up with as many rules and laws they can think of about road safety. 4. Share with the rest of the class; give a prize to the student who comes up with the most correct rules vs laws. Correct any rules that students may have said were laws or vice versa. 	Road Safety Rules and Laws		Rules	Laws	1. Look out for cars in the driveway	1. Always wear a helmet	2.	2.
Road Safety Rules and Laws									
Rules	Laws								
1. Look out for cars in the driveway	1. Always wear a helmet								
2.	2.								
3mins	<p>Conclusion: <i>Today's lesson was to demonstrate the importance of following rules and laws as they are designed to keep you safe. We learnt that you should be putting on a seatbelt every time you get into a car otherwise you might be scrambled like some of our eggs in the experiment.</i></p>								